The relationship between medical school experiences and inter-racial anxiety among 3900 students at 49 schools

Research Highlights
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Purpose: There is substantial evidence of racial disparities in health care. Physicians decision-making and interpersonal processes of care contribute to these disparities. As a result, medical schools include training to improve care for racial ethnic and other minorities. Most of this training focuses on knowledge, beliefs and attitudes, often with significant focus on implicit (unconscious, unintended) attitudes. Very little is known about the impact of such curriculum and to our knowledge, no study of potential unintended consequences. One possible unintended consequence is an increase in inter-racial anxiety, a phenomenon that has been shown to have significant deleterious effects on interracial encounters and relationships. Interracial anxiety is defined as a heightened levels of anxiety and arousal experienced by members of different races when interacting with each other. Understanding the way school experiences affect graduating student interracial anxiety is important because interracial anxiety has been shown to reduces the quality of, and Blacks ratings of, inter group interactions, and may lead to or exacerbate hostility in the person experiencing interracial anxiety, reinforcing the desire to avoid such contact in the future. Furthermore, anxiety absorbs a great deal of cognitive resources which has, in turn, been shown to diminish clinical reasoning and as such interracial anxiety may reduce the quality of clinical judgement.

Methods: This study draws on the Medical Student CHANGE Study, our longitudinal cohort study of 4765 medical students recruited in their 1st year of medical school from a stratified random sample of 49 US schools. Participants include 3959 students matriculating in 2010 who completed both baseline (first semester of Y1/MS1) and follow-up (last semester of Y4/MS4) surveys (84% of baseline completers). At both time points students completed a web-based questionnaire that included/ among other things, demographics, individual scores on personal bias awareness, implicit racial attitudes, explicit racial attitudes, and interracial anxiety. At Y4 the questionnaire also included student reports on school factors such as racial climate and on the specific training they received. Linear mixed models were used (to adjust for intraschool correlation) to examine the relationship between individual factors, medical school experiences, and change in interracial anxiety at Y4, independent of interracial anxiety score in Y1. Interracial anxiety was assessed a widely used and validated scale/ Questions include things such as, I suspect Black patients will be watching my behavior closely for prejudice, and, I am more nervous interacting with Black patients than with White patients, respectively.

Results: In mixed effects multivariate modelling, student bias awareness, having observed discrimination towards racial and ethnic minority patients, and ratings on tenseness of school racial climate were associated with higher interracial anxiety scores while student perception that the school provided a positive opportunities to learn from members of different races, made an effort to recruit and create a positive environment for racial and ethnic minorities, and decreased explicit biases towards racial minorities were predictive of lower interracial anxiety, independent of all other variables in the model and baseline interracial anxiety. Neither specific training received nor implicit racial attitudes had a relationship with interracial anxiety at Y4 independent of other variables in the model and baseline interracial anxiety. Higher interracial anxiety was associated with decreased intention to work with minority patient populations.
Discussion: Negative school racial climate predicted higher graduating student interracial anxiety while positive school actions predicted lower interracial anxiety at Y4, independent of other factors and interracial anxiety at Y1. Formal curricula was not associated with student interracial anxiety.

Significance: These findings converge with other findings to highlight the importance of informal school factors and climate affecting graduating student preparedness for and propensity to provide equitable and high quality care for racial minority physicians.
Purpose: Physicians considered underrepresented in medicine (UIM) construct their professional identities differently when compared to their peers. [1] This finding has been echoed in other fields where there are similarly disproportionate number of minorities in the profession. [2] However, despite this new finding in medical education, very few studies on professional identity formation (PiF) investigate the challenges that UIM physicians experience. The purpose of this study was to sensitize future research in PiF on UIM physicians to potential areas of fruitful inquiry.

Methods: This study draws on the Medical Student CHANGE Study, our longitudinal cohort study of 4765 medical students recruited in their 1st year of medical school from a stratified random sample of 49 US schools. Participants include 3959 students matriculating in 2010 who completed both baseline (first semester of Y1/MS1) and follow-up (last semester of Y4/MS4) surveys (84% of. This phenomenographical [3] study utilized critical theory [4] as a framework to explore differences and similarities between what and how 23 UIM and non-UIM students talked about their professional identity. Data sources included semi-structured interviews that were transcribed and analyzed using the post-colonial concept of palimpsests [5]. In historical terms, palimpsests are documents that have been erased and written over in favor of new narratives. They served as a way to understand pre-colonial thought and perspective on various cultural and political issues. As an analytical lens, palimpsests allow researchers to see the dominant narrative overlaying traces of other text that tell a very different story. Using latent content analysis [6], these narratives were analyzed for similarities and differences. IRB deemed this study exempt.

Results: Analysis of what and how students talked about their professional identities revealed that at one level UIM and non-UIM students discuss their professional identity in ways that reflect the published PiF literature. These issues represent the dominant and topmost narrative in PiF research, creating the illusion that all students experience similar issues in their professional identity development. However, underneath this narrative in another one, in which UIM students describe a professional environment that feels hostile to who they are as a racial and ethnic minority. They reveal a suppression of their true selves, perseverance on issues related to their racial identity in medicine, and describe insidious microaggressions from both preceptors and peers.

Discussion: A closer look at the PiF narratives of UIM students reveals that UIM students experience discrimination and prejudice in their professional lives, issues that were completely absent in comments made by non-UIM students participating in this study and in the published PiF literature.

Significance: UIM students have a unique socio-historical-political context that is not taken into consideration in research on PiF. Future research on PiF must take into consideration this context to understand the development of professional identities in a way that captures issues salient to students experiences of PiF.
The Path through Medical School, Does Generation Status Matter?

Research Highlights

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Purpose: Although First Generation (FG) college graduates are under-represented among US medical students, there is little research on the academic experiences of FG compared to their Continuing generation (CG) peers with at least one college-graduate parent/guardian. To help address this gap, we examined the effect of FG status on: medical-school outcomes: graduation, dismissal and withdrawal rates, and academic performance measured by United States Medical Licensing Examination first-attempt passing (vs. failing) scores on Step1 and Step2 Clinical Knowledge (CK) exams.

Methods: Responses to the Association of American Medical Colleges Post-MCAT, Matriculating Student (MSQ) and Graduation Questionnaires, data from the Student Records System and the National Board of Medical Examiners were obtained for US medical school matriculants in academic years 2007-2008 through 2011-2012. Chi-square tests were used to measure proportional differences between FG and CG for each outcome (2-sided P-values are reported). Multivariable logistic regression models were used to assess the independent effects of generation status, gender, race/ethnicity, age at MCAT, undergraduate institution Carnegie Classification, participation in MCAT prep course and high school enrichment programs, and health-related work prior to medical school, and MCAT scores on medical-school outcomes. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) are reported. STATA 15.0 was used for analysis.

Results: Of 76,646 MSQ respondents, 12.1% were FG. As a group, Blacks, American Indians, Alaskan and Hawaiian Natives were two times (95% CI: 1.92-2.1) more likely than Whites to be FG. Unadjusted analysis showed FGs were significantly less likely than their CG peers to graduate (OR:0.84 [95%CI:0.76-0.93]), pass Step1 (OR:0.59 [95% CI:0.54-0.65]), Step2CS (OR:0.67 [95% CI:0.59-0.76]) and Step2CK (OR:0.50 [95%CI:0.45-0.56]) and more likely to be dismissed (OR:1.9 [95%CI:1.5-2.3]) and to withdraw (OR:1.2 95% CI:1.1-1.4). After covariate adjustment, FG students were less likely than their CG peers to pass Step2CK (OR:0.76 [95%CI:0.66-0.88]) and more likely to be dismissed (OR:1.4; 95%CI:1.1-1.8).

Discussion: To date, the medical education literature has offered little information on the academic experiences of medical students who are first generation college graduates. Results reveal generational group (FG vs. CG) differences in the academic experiences and trajectories of medical school matriculants in this cohort.

Significance: Findings from this national cohort study indicate that FG are more likely than CG students to struggle during medical school and may benefit from targeted educational initiatives both before and during medical school. These data suggest that more research is needed to inform the design of effective student support interventions that help medical education achieve the goal of a more diverse pool of academically successful medical learners.
Identifying Levers to Urgently Impact Change in Diversity and Inclusion Via the Lens of a Chief Diversity Officer

Innovation Highlights

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Purpose: Physicians who identified as minorities were 30% more likely to withdraw from residency than their non-minority colleagues and also were eight more times likely to take extended leaves of absence (1). Many institutions have created the position of Chief Diversity Officer (CDO) to help better address the issues of diversity and inclusion that impact trainees who identify as underrepresented. The impact of this role is still one that is under investigation. It is essential to understand the barriers that individuals in this role face to better alleviate these obstacles. Additionally, understanding the positive levers to impact change is essential to facilitating a nationwide movement to enhance the climate of diversity and inclusion.

Methods: We interviewed 37 CDOs from 36 institutions across the country at the 2018 AAMC National Conference in Austin, Texas. We asked five questions which included what do you do, what were your greatest successes, what were your failures, what are your relationships with others like, and what barriers and levers have you encountered in the role?

Results: CDOs identified the following themes in regards to what pivotal levers, barriers, and key factors to impacting institutional change they’ve encountered at their institutions:

1.) Levers:
   CDOs identified the LCME and student frustration as two of the largest levers for impacting positive change at their institutions. Many CDOs reported that their position came about because of citations by the LCME or an upcoming LCME visit. Student protests and mental health issues related to discrimination were among the shared stories that CDOs cited as catalysts for change.

2.) Barriers:
   Many CDOs described having no formal training for the role and were often trailblazers, being the first in the role at their institution. The AAMC Chief Diversity Officer Course was a source of training for those in the role. Many reported seeking out informal mentorship from more experienced CDOs. Lack of funding to invest in initiatives was also commonly cited as a barrier to doing the work. Additionally, many Chief Diversity Officers cited having no metrics for the position, making it difficult to measure and assess progress.

3.) The Culture of Diversity and Inclusion Must be Woven into the Fabric of the Institution as Opposed to Being a Check-Box:
   Institutions that were described as thriving, had a decentralized network of individuals doing the work in different departments. Many had ambassadors in each department, who helped to identify key stakeholders. High functioning offices employed a team of assistant deans to effectively operationalize strategies.

Discussion: To many Chief Diversity Officers are now leveraging the LCME and student frustrations to not only meet requirements but excel in the arena of enhancing the diversity and inclusion climate at their institutions. Lack of training, funding, and metrics adversely impact the ability to do the role effectively and are challenges that can be addressed, to remove barriers to
doing the work effectively.

The culture of Diversity and Inclusion is best embodied not in an office, but as a value and thread that runs through the entire institution. Identifying leaders in departments who can act as diversity and inclusion ambassadors can be an effective tool to ensure that each department has a representative who can remain accountable to the institution's vision.

**Significance:** It is essential to urgently share this novel data, as institutions are thirsty for knowledge on how to optimize the work being done in this critical time. The ACGME updated the Common Program Requirements to state that all residency programs must promote the recruitment and retention of a diverse workforce, effective July 2019 (2). This work strives to address how to most effectively create positive change in the arena of diversity and inclusion.